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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/252,034 02/18/99 HOSHINO

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000466 WM31/1010  
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EXAMINER

AHMED, S

ART UNIT

PAPER NUMBER

2623  
DATE MAILED:

12  
10/10/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

09/252034

Applicant(s)

Satoshi Hoshino

Examiner

S. Ahmed

Group Art Unit

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—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 7/19/01
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 8-25 is/are pending in the application.
- ☐ Of the above claim(s) is/are withdrawn from consideration.
- ☐ Claim(s) is/are allowed.
- ☒ Claim(s) 8-25 is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☐ Claim(s) are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

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1. In view of the appeal brief filed on 7/19/01, PROSECUTION IS HEREBY REOPENED.

New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (a) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (b) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8-19 and 20-25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Claim 20, recites “ and permitting movement of the contact surface below the detent position when pressure on the contact surface is greater than the first pressure”, lines 11-14. There is no disclosure in the specification as originally filled of a restraint having a detent position at a depressed location of the contact surface and that permitting movement of the contact surface below the detent position when pressure on the contact surface is greater than the first pressure nor how to perform. The specification discloses that the contact surface moves downward when the fingertip is placed on the contact surface and moves upwards when the fingertip is removed. when the contact surface is pushed down to the lock mechanism (predetermined position) it is locked by the lock mechanism (see specification, page 6, lines 9-17, page 7, lines 6-17). Furthermore there is no drawings that shows the contact surface below the detent position when pressure on the contact surface is greater than the first pressure. Fig. 1, shows the contact surface above the detent position “lock” when pressure on the contact surface is less than the first pressure. Fig. 2, shows the contact surface at the detent position “lock” when the first pressure is applied to the contact surface. There is no other Figures to show the contact surface below the detent position when pressure on the contact surface is greater than the first pressure.

As to claim 8-19, 21-25, refer to claim 20 rejection.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “ restraint permitting movement

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of the contact surface below the detent position when pressure on the contact surface is greater than the first pressure” (refer to paragraph 7) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 20-24, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuyashi Yasaku [Japanese Patent No. 63-5551] in view of Filip (U.S. Patent 4,025,748).

As to claim 20, Yasaku discloses a device for detecting a fingerprint of a fingertip placed on a contact surface that moves up and down and is part of a fingerprint input section, the device comprising:

a moving element opposing downward movement of the contact surface when the contact surface is pressed downward by a fingertip whose fingerprint is to be detected [ spring 11, permits the surface 1 to move when finger tip is pressed against the surface (see Fig. 1, Abstract, lines 7-11)];

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a restraint urging the contact surface to remain in a predetermined position when a predetermined pressure [a first pressure] is applied to the contact surface by a fingertip and permitting movement of the contact surface above the predetermined position when pressure on the contact surface is less than the first pressure [ the contact surface 1 stops at a predetermined position when a predetermined pressure [a first pressure] is applied to it and that permits detection of the fingerprint (Fig. 2, Abstract, lines 19-22), Fig. 1, shows the contact surface 1 above the predetermined position when the pressure on the contact surface is less than the first pressure (the press-on force of the finger is not the appropriate and sufficient press-on force)]; and

a detecting unit detecting a fingerprint on the contact surface when the contact surface is in the predetermine position [when the contact surface 1 is stopped by the coil springs 11 at a certain displacement when an appropriate and sufficient press-on force is maintained on the contact surface, switch 4 is turned on to drive an image sensor part 2 to capture a fingerprint image (Fig. 1, Abstract, lines 19-22)]. Even though Yasaku does not exciplicitly disclose permitting movement of the contact surface below the predetermined position when pressure on the contact surface is greater than the first pressure, there is nothing to prevent the contact surface 1 from moving below the predetermined position if too much pressure is applied to the contact surface because the movable contact 13 of switch 4 has the shape of an elastic plate spring which is only fastened at one end and can be pushed more downward (see Fig. 1).

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Yasaku does not disclose that the restraint having a detent position at a depressed location of the contact surface and urging the contact surface to remain in the detent position when a first pressure is applied to the contact surface.

Filip discloses a switch comprises a button 30 (contact surface) that is pushed by s finger . When the finger is pressed atop of the button 30, the switch's rod engages a set of electrical contacts and the switch's rod is locked in position [electrical contacts remain in that position] (Abstract, Figs.3, 4) . It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Filip's teachings to modify Yasaku's switch by using a restraint having a detent position at a depressed location of the contact surface and urging the contact surface to remain in the detent position when a finger applies a pressure to the contact surface in order to prevent deviation of the pressure applied by the fingertip onto the contact surface such as in cases of elderly people, infants, people with injuries, or sick individuals who cannot maintain adequate pressure and balance and prevent generating large differences in the fingerprint images from a fingerprint-characteristic standpoint so that the image of the fingerprint will be imaged in a fixed form every time.

As to claim 21, Yasaku further discloses, further comprising a switch at the detent position that activates said detector when the contact surface is in the detent position [when the contact surface 1 is in detent position switch 4 is turned on which activates image sensor 2 [detector] to image the fingerprint (Fig 2).

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As to claim 22, Yasaku further discloses, wherein the contact surface comprises a projection that contacts said switch when the contact surface is in the detent position [movable contact 13 is a projection which contacts the steady contact 12 of the switch when the contact surface 1 is in detent position (Fig. 2).

(page 5, lines 12-21, page 6, lines 1-12).

As to claim 23, Filip further discloses, wherein said restraint comprises a spring member with a recess that defines the detent position [the restraint is a coil spring 45 that engages a small cavity 47 (recess) in order to lock the switch in the lock position (the detent position) (col. 2, lines 56-67, Figs 3 and 4)].

As to claim 24, Filip further discloses, wherein the contact surface comprises a projection that fits into said recess when the contact surface is in the detent position [flange member 42 (projection) extends outwardly from the switch housing when the flange is in engagement in the cavity 41 (recess) to hold the switch locked in its depressed position (col. 2, line 68- col. 3, line 9)].

As to claim 8, Yasaku further discloses, comprising:

a memory for storing a sequence of fingerprint data signals, which is detected from a fingertip (Fig. 3, item 6 is a memory for storing detected fingerprint) ; and

means for comparing a fingerprint of the fingertip placed currently on said contact surface with the fingerprint data signal sequence stored in said memory (Fig. 3, item 8 is a fingerprint collation circuit (means for comparing), item 7 is a memory stores registered fingerprints).



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7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuyashi Yasaku [Japanese Patent No. 63-5551] in view of Filip (U.S. Patent 4,025,748) as applied to claim 20 above and further in view of Murata (U.S. Patent 4,642,433).

As to claim 25, neither Yasaku nor Filip discloses wherein said spring member comprises a leaf spring that is urged radially outward by said projection when said projection is not in said recess.

Murata discloses a push-button switch that gives a tactile feel to the finger of the operator corresponding to a clicking operation. The switch comprises a stem 2 and a leaf spring 7, when the stem 2 is depressed the projection 2a of the stem 2 pushes inclined surface 7e on the protruding portion 7d shifting sidewardly (leaf spring is urged radially outward by the projection) when projection 2a is not in recess (see figs 1 and 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Murata's teachings to modify the combined switch of Yasaku and Filip by using a spring member comprises a leaf spring that is urged radially outward by the projection when the projection is not in the recess in order to give a tactile feel to the finger of the operator corresponding to a clicking operation.

8. Claims 9-10, 12-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuyashi Yasaku [Japanese Patent No. 63-5551] in view of Filip (U.S. Patent 4,025,748) as applied to claim 20 above and further in view of Itsumi et al (U.S. Patent 5,559,504).

As to claim 9, neither Yasaku nor Filip discloses, wherein said detecting unit comprises a solid-state image sensor for scanning a fingerprint image into a sequence of data signals.

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Itsumi discloses a device for performing identification by sensing the fingerprint of a finger, the device comprising a fingerprint sensor, the sensor is a printed substrate material (solid-state image sensor) (col.5, line 66-col. 6, line 11). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Itsumi's teachings to modify the combined device of Yasaku and Filip by using solid-state fingerprint image sensor in order to achieve a reliable accurate sensor that is not damaged by body fluid (i.e sweat) secreted from the finger tip to detect the fingerprint (see col. 6, lines 5-6) and protect a system that can be started only by an authorized person.

As to claim 10, neither Yasaku nor Filip discloses, wherein said detecting unit comprises:  
a converting circuit to convert a variable pressure from the fingertip into a variable electric resistance; and  
a measuring circuit to measure said variable electric resistance.

Itsumi discloses a device for performing identification by sensing the fingerprint of a finger, the device comprising a fingerprint sensor, the fingerprint sensor comprises a number of linear electrode array, when a finger is pressed against the contact electrodes the resistances among the linear contact electrodes are changed (variable resistance) in accordance with the amount of projection of the skin surface of the finger, the resistances are sequentially read from the respective electrode pad and converted into a one dimensional resistance signal (col. 6, lines 12-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Itsumi's teachings to modify the combined device of Yasaku and Filip

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by converting a variable pressure from the fingertip into a variable electric resistance and measuring the variable electric resistance in order to protect a system that can be started only by an authorized person and arrange the system in a small data volume with a simple algorithm thereby shortening the time required for the whole signal processing and obtain a compact system (see col.3, lines 37-41).

As to claim 12, Itsumi further discloses an electric apparatus [a computer] which executes a predetermined operation and which includes the fingerprint device, wherein said electric apparatus is powered when the fingerprint data signal sequence of the fingertip placed currently on said contact surface is stored in said memory [the power supply of the computer body is enabled only when the input fingerprint matches a fingerprint registered (stored in the memory in advance) (col. 12, lines 49-61, col.13, lines 4-11)].

As to claim 13, Itsumi further discloses, wherein the device is operable as a power switch [the power supply of the computer body is enabled by the fingerprint sensor col.13, lines 4-11)].

As to claim 14, Itsumi further discloses an electric apparatus [computer] which executes a predetermined operation and which includes the fingerprint device, wherein said electric apparatus is powered when the fingertip placed currently on said contact surface is coincident with the fingerprint data signal sequence stored in said memory [the power supply of the computer body is enabled only when the input fingerprint matches a fingerprint registered (stored in the memory in advance) (col. 12, lines 49-61, col.13, lines 4-11)].

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As to claim 15, Itsumi further discloses, wherein the device is operable as a power switch [the power supply of the computer body is enabled by the fingerprint sensor col.13, lines 4-11)].

As to claim 16, Itsumi further discloses, a doorkeeper apparatus which controls a door lock mechanism [car door lock] and which includes the fingerprint device, wherein said doorkeeper apparatus opens a door when the fingerprint data signal sequence of the fingertip placed currently on said contact surface is stored in said memory (Fig. 31, and col. 16, lines 34-49).

As to claim 18, Itsumi further discloses, a doorkeeper apparatus which controls a door lock mechanism [car door lock] and which includes the fingerprint device, wherein said doorkeeper apparatus opens a door when the fingertip placed currently on said contact surface is coincident with the fingerprint data signal sequence stored in said memory (Fig. 31, and col. 16, lines 34-49).

9. Claims 17, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuyashi Yasaku [Japanese Patent No. 63-5551] in view of Filip (U.S. Patent 4,025,748) in view of Itsumi et al (U.S. Patent 5,559,504) as applied to claims 16 and 18 above and further in view of Heinz Lubke (DE 29 52 212).

As to claim 17, Itsumi further discloses, a doorkeeper apparatus which controls a door lock mechanism [car door lock] and which includes the fingerprint device (Fig. 31, and col. 16, lines 34-49). Neither Yasaku, nor Filip nor Itsumi discloses that the door is a building door. However it is well-known in the art and conventional to use fingerprint sensor for door locks on

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building doors (Official Notice). Itsumi does not disclose, wherein the device is operable as a doorbell switch.

Lubke discloses a lock that uses a switch to control a door lock on a house door or an apartment door. The switch is operated via the doorbell push-button, only the bell button need to be on the house door (Abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Lubke's teachings to modify the combined device of Yasaku, Filip and Itsumi by using a fingerprint sensor on a doorbell switch in order to simplify and reduce the cost of the system by using inexpensive doorbell push-button to control the lock as well as the attendant difficulties during the opening of the door can be avoided.

As to claim 19, refer to claim 17 rejection.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuyashi Yasaku [Japanese Patent No. 63-5551] in view of Filip (U.S. Patent 4,025,748) as applied to claim 20 above and further in view of Tsikos (U.S. Patent 4,353,056).

As to claim 11, neither Yasaku nor Filip discloses, wherein said detecting unit comprises:

a converting circuit to convert a variable pressure from the fingertip into a variable capacitance;  
a measuring circuit to measure said. variable capacitance.

Tsikos discloses a fingerprint sensor that contains a large number of small capacitors, the capacitance of the capacitors is locally changed according to the ridge/valley pattern of the finger (col. 1, line 62-col. 2, line 8). It would have been obvious to one having ordinary skill in the art

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at the time the invention was made to use Tsikos's teachings to modify the combined device of Yasaku and Filip by using a variable capacitance fingerprint sensor instead of the optical fingerprint sensor in order to achieve a fingerprint sensor that is reliable, accurate and of simpler structure than optical techniques that require a high amount of sophisticated equipment (col. 1, lines 23-39).

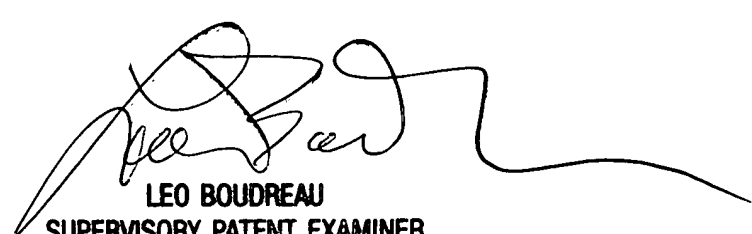
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Samir Ahmed whose telephone number is (703) 305-9870. The examiner can normally be reached on Monday to Friday from 8:00 A.M. to 5:00 P.M. The fax number of this Group 2757 is (703) 872-9314. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Au, Amelia can be reached on (703) 308-6604. The fax phone number for this Group is (703) 306-5406.

SA

10/5/01



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